

INSTALLATION GUIDE

AXIS Q7920 Chassis

ENGLISH



www.use-ip.co.uk
01304 827609



Legal Considerations

Video and audio surveillance can be regulated by laws that vary from country to country. Check the laws in your local region before using this product for surveillance purposes.

Liability

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Equipment Modifications

This equipment must be installed and used in strict accordance with the instructions given in the user documentation. This equipment contains no user-serviceable components. Unauthorized equipment changes or modifications will invalidate all applicable regulatory certifications and approvals.

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Support

Should you require any technical assistance, please contact your Axis reseller. If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response. If you are connected to the Internet, you can:

- download user documentation and software updates
- find answers to resolved problems in the FAQ database. Search by product, category, or phrase
- report problems to Axis support staff by logging in to your private support area
- chat with Axis support staff (selected countries only)
- visit Axis Support at www.axis.com/techsup/

Learn More!

Visit Axis learning center www.axis.com/academy/ for useful trainings, webinars, tutorials and guides.

Regulatory Information

Europe

CE This product complies with the applicable CE marking directives and harmonized standards:

- Electromagnetic Compatibility (EMC) Directive 2004/108/EC. See *Electromagnetic Compatibility (EMC)*, on page 2.
- Low Voltage (LVD) Directive 2006/95/EC. See *Safety*, on page 3.
- Restrictions of Hazardous Substances (RoHS) Directive 2011/65/EU. See *Disposal and Recycling*, on page 3.

A copy of the original declaration of conformity may be obtained from Axis Communications AB. See *Contact Information*, on page 3.

Electromagnetic Compatibility (EMC)

This equipment has been designed and tested to fulfill applicable standards for:

- Radio frequency emission when installed according to the instructions and used in its intended environment.
- Immunity to electrical and electromagnetic phenomena when installed according to the instructions and used in its intended environment.

USA

Using an unshielded network cable (UTP) – This equipment has been tested using an unshielded network cable (UTP) and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Using a shielded network cable (STP) – This equipment has also been tested using a shielded network cable (STP) and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canada

This Class B digital apparatus complies with Canadian ICES-003.

Europe

This digital equipment fulfills the requirements for RF emission according to the Class B limit of EN 55022.

This product fulfills the requirements for emissions and immunity according to EN 50121-4 and IEC 62236-4 railway applications.

This product fulfills the requirements for immunity according to EN 61000-6-1 residential, commercial and light-industrial environments.

This product fulfills the requirements for immunity according to EN 61000-6-2 industrial environments.

This product fulfills the requirements for immunity according to EN 55024 office and commercial environments

Australia/New Zealand

This digital equipment fulfills the requirements for RF emission according to the Class B limit of AS/NZS CISPR 22.

Japan

この装置は、クラスB 情報技術装置です。この装置は、家庭環境で使用することを目的としています。この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

Korea

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

FreeRTOS

The software in this product is based on FreeRTOS version 7.2.0. See www.freertos.org for more information.

Source code for this version of FreeRTOS can be provided from Axis Communications AB upon request.

Safety

This product complies with IEC/EN/UL 60950-1, Safety of Information Technology Equipment.

Disposal and Recycling

When this product has reached the end of its useful life, dispose of it according to local laws and regulations. For information about your nearest designated collection point, contact your local authority responsible for waste disposal. In accordance with local legislation, penalties may be applicable for incorrect disposal of this waste.

Europe



■ This symbol means that the product shall not be disposed of together with household or commercial waste. Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) is applicable in the European Union member states. To prevent potential harm to human health and the environment, the product must be disposed of in an approved and environmentally safe recycling process. For information about your nearest designated collection point, contact your local authority responsible for waste disposal. Businesses should contact the product supplier for information about how to dispose of this product correctly.

This product complies with the requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

China



This product complies with the requirements of the legislative act Administration on the Control of Pollution Caused by Electronic Information Products (ACPEIP).

Contact Information

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www.axis.com

Safety Information

Read through this Installation Guide carefully before installing the product. Keep the Installation Guide for future reference.

Hazard Levels

⚠ DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, could result in damage to property.

Other Message Levels

Important

Indicates significant information which is essential for the product to function correctly.

Note

Indicates useful information which helps in getting the most out of the product.

Safety Instructions

NOTICE

- The Axis product shall be used in compliance with local laws and regulations.
- To use the Axis product outdoors, or in similar environments, it shall be installed in an approved outdoor housing.
- Store the Axis product in a dry and ventilated environment.
- Avoid exposing the Axis product to vibration, shocks or heavy pressure.
- Do not install the product on unstable or vibrating brackets, surfaces or walls.
- Use only applicable tools when installing the Axis product. Excessive force could cause damage to the product.
- Do not use chemicals, caustic agents, or aerosol cleaners. Use a damp cloth for cleaning.
- Use only accessories that comply with technical specification of the product. These can be provided by Axis or a third party.
- Use only spare parts provided by or recommended by Axis.
- Do not attempt to repair the product by yourself. Contact Axis support or your Axis reseller for service matters

Transportation

NOTICE

- When transporting the Axis product, use the original packaging or equivalent to prevent damage to the product.

Installation Guide

This installation Guide provides instructions for installing AXIS Q7920 Chassis on your network.

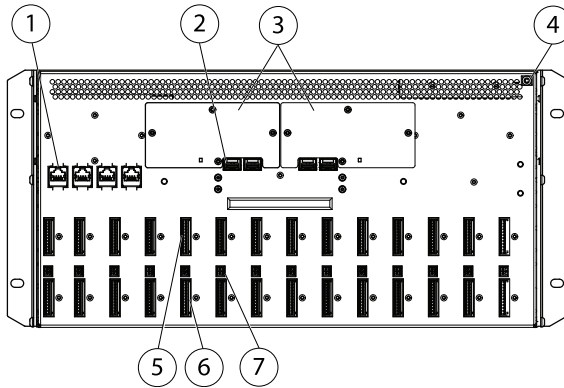
Installation Steps

1. Make sure the package contents, tools and other materials necessary for the installation are in order. See *page 7*.
2. Study the hardware overview. See *page 8*.
3. Install the hardware. See *page 10*.

Package Contents

- Video encoder chassis
 - AXIS Q7920
- Cover plates
 - 1 1-port front panel cover
 - 6 2-port front panel covers
- 2 AC power cords
 - Europe
 - UK
 - US, Canada and Japan
 - Australia
 - Switzerland
 - Denmark
 - South Korea
 - Argentina
- Terminal connectors
 - 28 14-pin terminal connectors
 - 14 2-pin terminal connectors
- Printed materials
 - AXIS Q7920 Chassis Installation Guide (this document)
- Included accessories
 - 4 feet

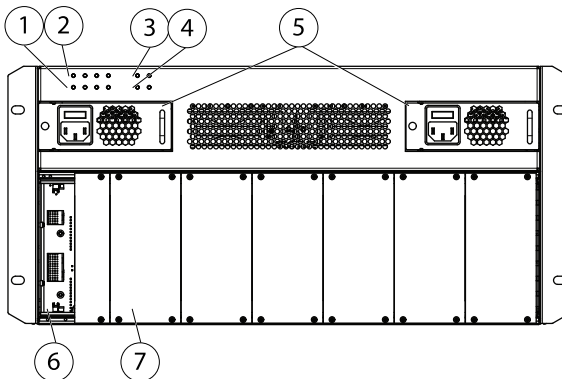
Hardware Overview



- 1 Network connector 1-4 RJ45
- 2 Network port 1-4 SFP
- 3 Fan tray cover
- 4 Grounding screw
- 5 I/O terminal connector
- 6 RS-485 connector
- 7 Power in/out connector

Note

SFP modules are not included in the delivery of AXIS Q7920.



- 1 Network LED 1-4 SFP
- 2 Network LED 1-4 RJ45
- 3 PSU LED 1-2

- 4 Fan LED 1-2
- 5 Power supply 1-2 (PSU 1 and PSU 2)
- 6 Slot 1
- 7 Front panel cover

LED indicators

LED	Color	Indication
Network RJ45 1-4	Green	Steady for a connection to 1000 Mbit/s network. Flashes for network activity.
	Amber	steady for a connection to 10/100 Mbit/s network. Flashes for network activity.
	Unlit	No network connection.

LED	Color	Indication
Network SFP 1-4	Green	Steady for a connection to 1000 Mbit/s network. Flashes for network activity.
	Unlit	No network connection.

LED	Color	Indication
PSU 1-2	Green	PSU1 and PSU2 are connected and turned on.
	Red	Indicates a fault in PSU1 or PSU2. It also indicates if PSU1 or PSU2 are disconnected or turned off.

LED	Color	Indication
Fan LED 1-2	Green	Both fans are working.
	Flashes green/red	Indicates a fault in one fan.
	Red	Indicates faults in both fans.

Note

In case of a faulty power supply, replace it with a new one. See *Replacing a power supply*, on page 14

In case of a faulty fan replace the fan tray with a new one. See *Replacing a fan tray*, on page 14

Specifications

Operating Conditions

The AXIS Q7920 is intended for indoor use only.

Product	Temperature	Humidity
AXIS Q7920	0 °C to 45 °C (32 °F to 113 °F)	10–85% RH (non-condensing)

Power Consumption

Product	AC
AXIS Q7920	100–240 V AC, max 365 W

Install the Hardware

General Placement Requirements

- Power source within 1.8 meters.
- There must be a minimum of 5 cm free space on the bottom, front, rear and on both sides of the AXIS Q7920 to ensure adequate ventilation.
- Do not stack other units or objects directly on top of the AXIS Q7920. The mounting brackets are not designed to support more than 1 unit.
- No excessive dust.

Connect Power

The AXIS Q7920 has two On/Off switches. To switch off power to the AXIS Q7920 both power supplies must be switched off.

Before switching on power to the AXIS Q7920, make sure the unit is properly grounded by using the grounding screw.

Ensure that the correct AC power cord for your region is used.

⚠WARNING

- To prevent the risk of electrical shock when in contact with the unit casing, only earthed/grounded power cords should be used to power the AXIS Q7920.
- Protection against overcurrents, short circuits and earth faults should be provided in the building installation.
- If a foreign object is accidentally dropped into the video encoder chassis, always disconnect power before attempting to remove the object.

Axis video encoder blades

S/N – (Serial Number) is identical to the units MAC/Ethernet address.

P/N – is the products model number.

Bus Connector – This is the physical interface to the I/O terminal connector on the chassis.

Mounting Axis video encoder blades

The AXIS Q7920 can accommodate 14 Axis video encoder blades. The slots for these are numbered 1–14 from left to right. There are 4 slot groups in AXIS Q7920. Slot 1–4, slot 5–7, slot 8–11 and slot 11–14

The first blade should be inserted in slot 1. After that all slots can be used without any further regulations. See *Optimizing Performance, on page 15* for information of how to optimize the performance of the AXIS Q7920.

In order to get full functionality from AXIS Q7920 the blade in slot 1 should be an AXIS Q7436, AXIS Q7404, AXIS Q7414, AXIS P7224 or newer.

Follow these steps to mount an Axis video encoder blade in the AXIS Q7920:

1. Remove the front panel cover from the slot in to which the video encoder blade will be mounted.
2. Slide the video encoder into place , using the guides as an aid.
3. Fix the video encoder in place, using the screws from the front panel cover.

The AXIS Q7920 supports hot-swap of video encoder blades. A blade can be removed and/or inserted without the need of switch off the AXIS Q7920.

NOTICE

Front panel covers should be used on all empty slots.

Unit connectors

Rear Connectors

Network connector : Standard RJ45 connector, designed for 10/100/1000 Mbps.

Network connector : Standard SFP connector, designed for 1000 Mbps.

RS-485 connector: Usually used for connecting Pan Tilt Zoom devices.

Power In/Out Connectors: 12 V DC 100 mA out. This connector could be used to supply power to external units.

I/O Terminal Connectors: Provides the physical interface for up to 12 I/Os.

Chassis ID

Chassis ID 0-15: Sets a chassis ID. Used in multichassis installations.

Chassis ID A-P: Currently not used.

Pin assignments

Pin Assignments for RS485 Connector – AXIS Q7900 and AXIS Q7920 Chassis

Pin	Function	Description
1	Channel 1, RS485A	A half-duplex RS485 interface for controlling auxiliary equipment such as PTZ devices.
2	Channel 1, RS485B	
3	Channel 2, RS485A	
4	Channel 2, RS485B	
5	Channel 3, RS485A	
6	Channel 3, RS485B	
7	Channel 4, RS485A	
8	Channel 4, RS485B	
9	Channel 5, RS485A	
10	Channel 5, RS485B	
11	Channel 6, RS485A	

12	Channel 6, RS485B
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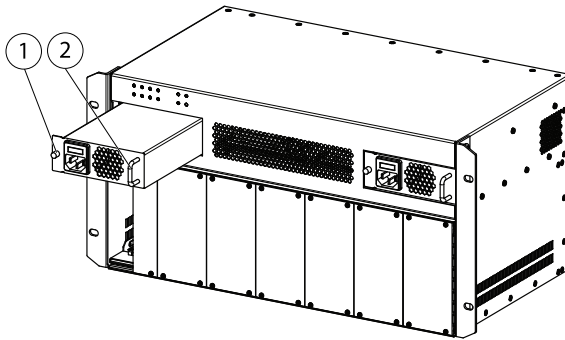
This table is for the AXIS Q7436 blade. If using another blade in AXIS Q7920 see the Installation Guide for the specific product.

Pin assignments for the I/O Connector of the AXIS Q7900 and AXIS Q7920 Chassis

Pin	Function	Description	
1	Channel 1, Configurable I/O 1	Digital input - Connect to GND to activate, or leave floating (or unconnected) to deactivate. Digital output - Uses an open drain NFET transistor with the source connected to GND. If used with an external relay, a diode must be connected in parallel with the load, for protection against voltage transients.	Min input = - 40 V DC Max input = + 40 V DC Max load = 100mA Max voltage = + 40 V DC (to the transistor)
2	Channel 2, Configurable I/O 1		
3	Channel 3, Configurable I/O 1		
4	Channel 4, Configurable I/O 1		
5	Channel 5, Configurable I/O 1		
6	Channel 6, Configurable I/O 1		
7	Channel 1, Configurable I/O 2		
8	Channel 2, Configurable I/O 2		
9	Channel 3, Configurable I/O 2		
10	Channel 4, Configurable I/O 2		
11	Channel 5, Configurable I/O 2		
12	Channel 6, Configurable I/O 2		

This table is for the AXIS Q7436 blade. If using another blade in the AXIS Q7920, see the Installation Guide for the specific product.

Replacing a power supply

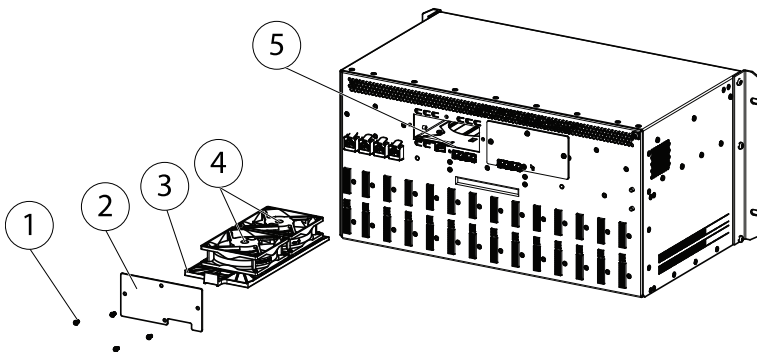


- 1 Screw
- 2 Handle

1. Turn off the power supply that needs to be replaced.
2. Loosen the screw located on the left side of the power supply and remove the power supply using the handle.
3. Insert a new power supply and retighten the screw.

The AXIS Q7920 supports hot-swap of a PSU. A PSU can be removed and/or inserted without the need of switch off the AXIS Q7920.

Replacing a fan tray



- 1 Screws x4
- 2 Lid fan
- 3 Fan tray

- 4 Fans
- 5 Fan power connectors x2

Follow these steps to replace a fan tray.

1. Remove the fan tray cover.
2. Disconnect the fans from the power connectors.
3. Gently pull out the fan tray.
4. Insert a new fan tray.
5. Connect the fans to the power connectors.
6. Mount the fan tray cover

The AXIS Q7920 supports hot-swap of a fan tray. A fan tray can be removed and/or inserted without the need of switch off the AXIS Q7920.

Optimizing Performance

Firmware Upgrade

The AXIS Q7920 has an automated built-in function for firmware upgrade. If a blade that is inserted in slot 1 in the AXIS Q7920 contains a newer firmware than the current one in AXIS Q7920. The AXIS Q7920 will automatically be upgraded to the new firmware version. The upgrade may take up to one minute to accomplish.

Network Redundancy

The network redundancy in AXIS Q7920 is controlled by software and requires that at least two network connectors (either RJ45 or SFP) are connected. There are four uplink groups in AXIS Q7920, each with a SFP and a RJ45 connector. The SFP connector has priority over the RJ45 connector. In case of a malfunction in a connection the AXIS Q7920 will check for a connection in the same uplink group or if needed check for a connection in another uplink group until a network connection can be established.

Hot-swap

The AXIS Q7920 supports hot-swap of blades, fan tray and PSU. They can be removed and/or inserted without affecting operation of the AXIS Q7920.

Rack Monitoring Daemon

In order to use the rack monitoring daemon function, the blade inserted in slot 1 must be an AXIS Q7436, AXIS Q7404, AXIS Q7414, AXIS P7224 or newer.

Maximum network output

In order to optimize the network performance of the AXIS Q7920 activate as many uplink groups as possible (either RJ45 or SFP). Spread the blades evenly among the slot groups.

For every slot group activated an uplink group should be activated. See below for the connection between slot groups and uplink groups.

Slot group 1: Slot 1–4. Uplink group 1

Slot group 2: Slot 5–7. Uplink group 2

Slot group 3: Slot 8–10. Uplink group 3

Slot group 4: Slot 11–14. Uplink group 4

The table below provides an example of how the blades can be evenly inserted in a 4, 6, 8 and 10 blades installation.

Number of blades	4	6	8	10
Slot 1	X	X	X	X
Slot 2		X	X	X
Slot 3				X
Slot 4				
Slot 5		X	X	
Slot 6	X		X	X
Slot 7				X
Slot 8		X		X
Slot 9	X		X	X
Slot 10			X	
Slot 11		X		
Slot 12	X	X		X
Slot 13			X	X
Slot 14			X	X

Warranty Information

For information about Axis' product warranty and thereto related information, see www.axis.com/warranty/

